

IN THE CLAIMS:

Please cancel claims 1-15 and substitute new claims 16-29, as follows:

1.-15. (Canceled)

16. (New) A method of metrologically detecting differences in a visually perceived color impression between a multi-color patterned surface of a reference surface and a multi-color patterned surface of an item under test, comprising the steps of:

- detecting a surface of the item under test and obtaining captured signals from the detected surface;
- obtaining a description of color characteristics of the multi-color patterned surface from the captured signals;
- concomitantly obtaining from the captured signals a description of picture definition of the multi-color patterned surface;
- obtaining a color characteristics variation rate by comparing the description of color characteristics with stored corresponding values of the reference surface;
- obtaining a picture definition variation rate by comparing the description of picture definition with corresponding stored values of the reference surface; and
- evaluating the visually perceived differences in color impression from the color characteristics variation-rate and the picture definition variation rate.

17. (New) The method according to claim 16, wherein the color characteristics is one of the following:

- a statistical description of the characteristics of the various colors applied,
- the geometric distribution of the various colors applied on the surface,

- shape-related features of single-colored elements all pertaining to one respective color of the multi-colored pattern,
- shape-related features of visually distinguishable elements of the multi-colored pattern.

18. (New) The method according to claim 16, wherein the color characteristics variation rate and the picture definition variation rate are separately displayed or are combined and displayed as a common variation rate which corresponds to the visually perceived color impression.

19. (New) The method according to claim 18, wherein the combination is effected by a parameterizable mathematical function, preferably by a polynomial, the parameters of which have been experimentally determined.

20. (New) The method according to claim 16, wherein the variation rates are compared with stored tolerance thresholds.

21. (New) The method according to claim 16, wherein the picture definition is determined from the intensity of the captured signals.

22. (New) The method according to claim 16, wherein the picture definition is determined from the saturation of the captured signals.

23. (New) An arrangement for the metrological detection of differences in a visually perceived color impression between a multi-color patterned reference surface and a multi-color patterned surface of an item under test, comprising:

- a light source with an essentially constant intensity and spectral distribution for illuminating the multi-color patterned surface of the item under test;
- a spatial sensor for detecting the illuminated surface of the item under test;
- an arithmetic unit in which metrological values are determined from captured signals provided by the spatial sensor to describe color characteristics of the multi-color patterned surface of the item under test;

means for deriving from the captured signals a description of picture definition of the multi-color patterned surface of the item under test; and

- display means for displaying a color characteristics variation rate obtained by comparison of the item under test with corresponding stored values of the reference surface, and a picture definition variation rate obtained by comparison of the item under test with corresponding stored values of the reference surface.

24. (New) The arrangement according to claim 23, wherein a conversion unit is provided which converts signals from the spatial sensor into intensity signals.

25. (New) The arrangement according to claim 23, wherein a conversion unit is provided which converts signals from the spatial sensor into saturation signals.

26. (New) The arrangement according to claim 23, wherein the spatial sensor is an image rendering color sensor.

27. (New) The arrangement according to claims 23, wherein the light source and the spatial sensor are combined in a measuring head.

28. (New) The arrangement according to claim 27, wherein the measuring head has calibration means for its automatic recalibration.

29. (New) The arrangement according to claim 27, wherein for detecting flat, moved products in form of a web, the measuring head is positioned sufficiently close to the detected surface of the web to prevent environmental light from significantly contributing to the captured signals.